

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P927858

Luminaire Tested: DFN2DIP-HX4F0-040D070US850-RLLONL

Issue Date: 12/12/2024

Test Information

Test Method: LM-79-2019
Report Number: P927858
REPORT IS A COMBINATION OF REPORTS P900874 AND P896187
Test Lab: INNOVATION CENTER
Issue Date: 12/12/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: DFN2DIP-HX4F0-040D070US850-RLLONL
Description: 4 foot, Hexagon Define Geo, with Direct 1in Regressed Frosted Lens, Indirect Open No Lens
Light Source: -
Ballast/Driver: -

Summary

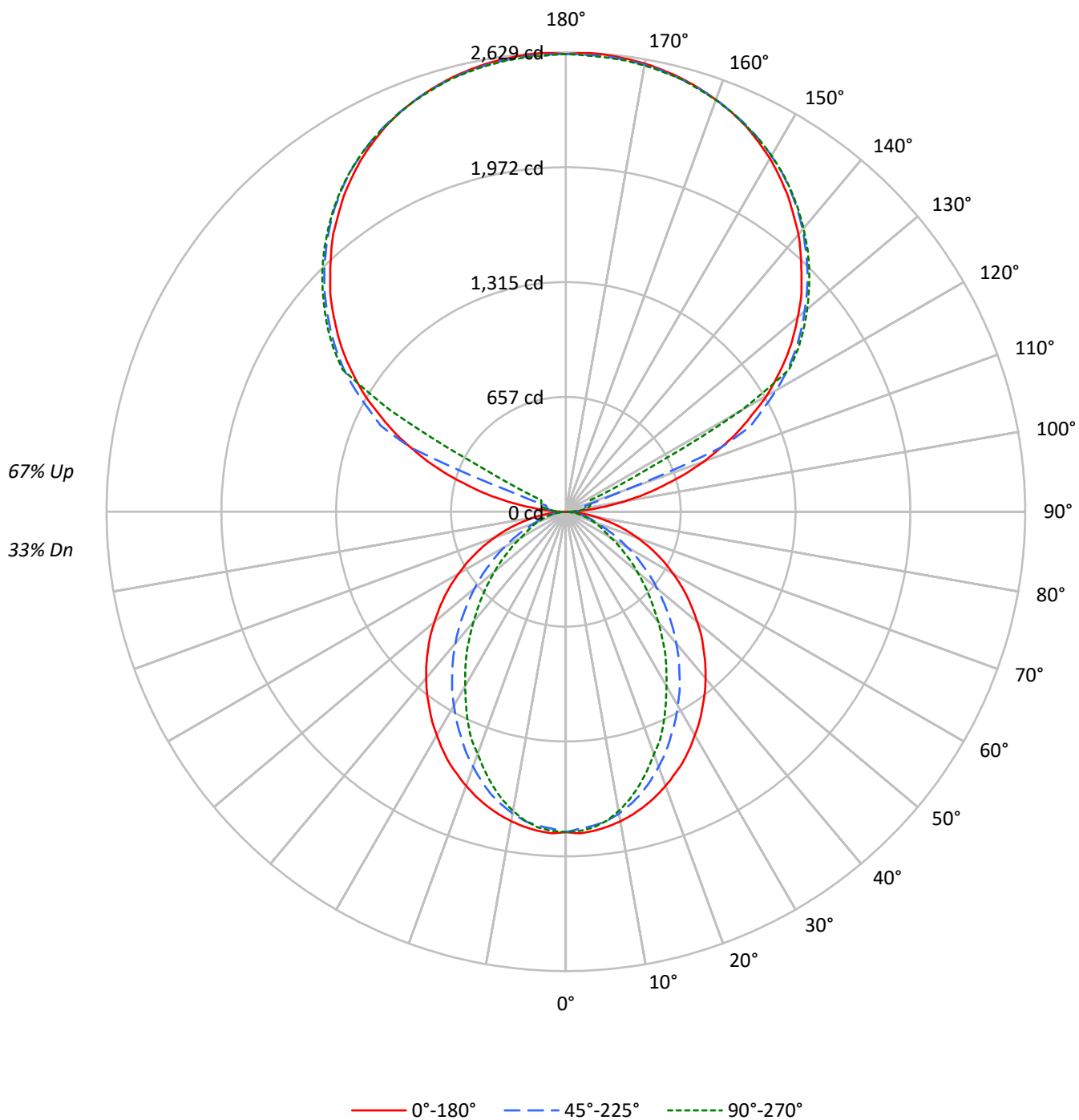
Lumens per Lamp: N/A
Luminaire Lumens: 11456.0 lumens
Efficiency: N/A
Efficacy: 134.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular w/ Sides (W: 3.54' x L: 4.09' x H: 0.1')
CIE Type: Semi-Indirect

Input Watts (W): 85.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.9977
Total Harmonic Distortion (THDi): 0.049
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20
RC	80				70				50				30				10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40
1	94	90	87	83	85	81	78	76	65	63	61	50	49	48	36	35	35
2	86	79	73	68	77	72	67	62	57	54	51	44	42	40	32	31	30
3	79	70	63	57	71	63	57	53	51	47	43	39	37	34	29	27	26
4	72	62	54	49	65	56	50	45	45	41	37	35	32	30	26	24	22
5	66	55	47	42	59	50	43	38	41	36	32	32	28	26	24	21	20
6	61	49	42	36	55	45	38	33	37	32	28	29	25	23	21	19	17
7	56	45	37	32	51	41	34	29	33	28	25	26	23	20	20	17	16
8	52	41	33	28	47	37	31	26	30	25	22	24	21	18	18	16	14
9	49	37	30	25	44	34	27	23	28	23	20	22	19	16	17	14	13
10	45	34	27	22	41	31	25	21	26	21	18	20	17	15	16	13	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1363	1363	1363
5°	1366	1342	1350
10°	1352	1316	1306
15°	1334	1272	1239
20°	1309	1212	1155
25°	1284	1145	1075
30°	1250	1077	973
35°	1217	1003	883
40°	1184	926	780
45°	1144	841	687
50°	1104	755	596
55°	1062	664	509
60°	1013	568	419
65°	957	470	377
70°	889	379	341
75°	803	335	311
80°	680	281	270
85°	475	188	203

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 90°

Luminance: 1345 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	171.8	1.5
10°-20°	471.7	4.1
20°-30°	662.3	5.8
30°-40°	721.9	6.3
40°-50°	663.5	5.8
50°-60°	521.1	4.5
60°-70°	339.2	3.0
70°-80°	174.6	1.5
80°-90°	49.2	0.4
90°-100°	86.4	0.8
100°-110°	322.1	2.8
110°-120°	854.1	7.5
120°-130°	1416.6	12.4
130°-140°	1504.8	13.1
140°-150°	1398.5	12.2
150°-160°	1124.4	9.8
160°-170°	724.5	6.3
170°-180°	249.4	2.2
0°-30°	1305.8	11.4
0°-40°	2027.7	17.7
0°-60°	3212.2	28.0
0°-90°	3775.2	33.0
90°-120°	1262.6	11.0
90°-150°	5582.5	48.7
90°-180°	7681.0	67.0
0°-180°	11456.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1833	1833	1833	1833	1833	
5°	1833	1825	1804	1818	1814	174
15°	1744	1726	1669	1638	1621	491
25°	1583	1530	1420	1352	1327	728
35°	1364	1279	1133	1029	992	854
45°	1115	1004	830	712	672	861
55°	848	718	539	440	408	758
65°	572	438	289	232	227	568
75°	305	189	133	121	120	323
85°	71	36	32	32	32	82
90°	2	23	38	48	51	11
95°	123	61	74	84	82	146
105°	576	633	116	136	144	616
115°	1090	1122	1170	292	156	1073
125°	1541	1566	1602	1615	1621	1375
135°	1907	1938	1954	1974	1970	1473
145°	2212	2210	2243	2256	2246	1384
155°	2436	2419	2442	2453	2438	1123
165°	2567	2556	2561	2574	2561	725
175°	2626	2612	2616	2629	2610	250
180°	2620	2620	2620	2620	2620	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1833.4	1833.4	1833.4	1833.4	1833.4
2.5°	1841.7	1833.4	1815.1	1831.8	1828.4
5°	1833.4	1825.1	1803.5	1818.4	1813.5
7.5°	1818.4	1808.6	1785.4	1791.8	1783.6
10°	1798.6	1786.9	1753.8	1748.7	1738.9
12.5°	1773.7	1758.8	1713.8	1704.0	1685.7
15°	1743.8	1725.5	1669.2	1637.7	1621.1
17.5°	1709.0	1682.4	1612.6	1576.2	1549.6
20°	1669.2	1635.9	1552.9	1511.6	1475.0
22.5°	1626.0	1587.9	1491.5	1435.2	1410.4
25°	1582.9	1529.8	1420.2	1352.3	1327.3
27.5°	1531.5	1475.0	1353.9	1275.9	1237.6
30°	1476.7	1413.5	1280.8	1196.3	1151.5
32.5°	1423.6	1347.2	1211.2	1111.7	1070.1
35°	1364.0	1279.2	1133.3	1028.7	992.1
37.5°	1305.8	1214.5	1060.2	945.6	904.3
40°	1244.4	1144.9	983.9	866.1	823.0
42.5°	1181.3	1075.2	907.6	784.7	743.4
45°	1115.0	1003.8	829.6	711.8	671.9
47.5°	1052.0	934.2	755.0	637.1	600.6
50°	982.2	864.5	681.9	567.4	532.7
52.5°	914.1	789.7	612.3	502.7	471.2
55°	847.8	718.4	539.2	439.7	408.2
57.5°	779.8	647.1	474.5	381.6	355.1
60°	710.1	577.3	406.4	321.9	295.4
62.5°	642.2	509.5	348.3	268.8	255.6
65°	572.5	437.9	288.7	232.3	227.2
67.5°	506.1	371.6	232.3	204.1	199.1
70°	436.4	307.0	192.4	175.9	169.1
72.5°	370.1	247.2	160.9	147.7	144.4
75°	305.2	189.1	132.7	121.1	119.6
77.5°	240.7	134.3	104.6	97.9	94.5
80°	180.8	96.3	79.5	73.1	73.1
82.5°	126.1	64.8	54.8	51.3	51.3
85°	71.3	36.5	31.5	31.5	31.5
87.5°	26.6	13.2	13.2	11.6	11.6
90°	1.8	22.7	37.8	47.5	51.1
92.5°	47.5	39.8	45.5	49.4	51.1
95°	123.1	60.6	73.9	83.5	81.5
97.5°	221.7	66.4	96.6	102.5	104.2
100°	335.7	75.9	108.0	123.1	127.0
102.5°	460.6	457.0	111.9	132.6	138.4
105°	576.3	633.2	115.7	136.4	144.1
107.5°	710.9	758.2	119.6	140.3	147.9
110°	840.0	879.5	331.8	142.3	149.7

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	961.3	995.2	963.1	145.8	151.7
115°	1090.0	1122.2	1169.7	292.0	155.6
117.5°	1201.9	1239.8	1272.1	1000.9	504.3
120°	1327.0	1355.4	1389.7	1412.4	1156.5
122.5°	1433.0	1463.4	1501.6	1512.8	1514.8
125°	1541.2	1565.9	1602.0	1615.3	1620.8
127.5°	1639.8	1666.3	1694.9	1713.8	1715.6
130°	1732.7	1763.1	1783.8	1804.8	1803.0
132.5°	1827.5	1852.3	1873.0	1890.1	1888.3
135°	1907.1	1937.5	1954.5	1973.6	1969.8
137.5°	1990.4	2013.3	2032.4	2051.3	2045.7
140°	2071.9	2087.2	2108.0	2125.1	2115.6
142.5°	2140.4	2153.7	2178.2	2193.3	2183.8
145°	2212.5	2210.5	2242.6	2255.9	2246.5
147.5°	2274.8	2269.2	2301.4	2310.8	2303.4
150°	2335.6	2322.4	2352.7	2363.9	2354.5
152.5°	2386.7	2371.6	2400.0	2411.4	2398.2
155°	2436.0	2419.1	2441.8	2453.1	2438.0
157.5°	2475.8	2460.8	2477.8	2491.1	2475.8
160°	2510.1	2498.6	2510.1	2521.3	2508.0
162.5°	2540.3	2529.0	2538.4	2551.7	2534.6
165°	2566.8	2555.6	2561.1	2574.4	2561.1
167.5°	2587.7	2576.2	2582.1	2595.4	2578.3
170°	2604.8	2593.4	2597.2	2610.5	2593.4
172.5°	2616.1	2604.8	2608.7	2621.9	2604.8
175°	2625.6	2612.2	2616.1	2629.3	2610.5
177.5°	2629.3	2616.1	2618.1	2631.4	2614.2
180°	2619.9	2619.9	2619.9	2619.9	2619.9

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CIE UGR TABLE:

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	6.38	7.09	7.48	8.18	9.68	2.36	3.06	3.45	4.15	5.65
	3H	8.05	8.68	9.16	9.78	11.30	3.54	4.17	4.64	5.27	6.78
	4H	8.66	9.26	9.77	10.36	11.88	3.98	4.58	5.10	5.68	7.20
	6H	9.07	9.62	10.20	10.73	12.26	4.30	4.85	5.42	5.95	7.49
	8H	9.20	9.72	10.32	10.84	12.36	4.39	4.91	5.51	6.03	7.56
	12H	9.25	9.75	10.38	10.86	12.41	4.43	4.93	5.56	6.04	7.59
4H	2H	6.39	6.99	7.51	8.09	9.61	2.94	3.54	4.06	4.64	6.16
	3H	8.21	8.71	9.33	9.83	11.36	4.28	4.78	5.41	5.90	7.44
	4H	8.89	9.35	10.03	10.47	12.02	4.82	5.28	5.95	6.40	7.95
	6H	9.40	9.80	10.54	10.93	12.48	5.24	5.63	6.38	6.77	8.31
	8H	9.58	9.94	10.71	11.07	12.63	5.36	5.73	6.50	6.86	8.42
	12H	9.67	10.00	10.82	11.14	12.71	5.42	5.76	6.58	6.90	8.46
8H	4H	8.85	9.22	9.99	10.35	11.91	5.09	5.46	6.23	6.59	8.15
	6H	9.42	9.72	10.57	10.89	12.45	5.61	5.91	6.77	7.09	8.64
	8H	9.63	9.90	10.80	11.05	12.63	5.80	6.07	6.97	7.22	8.80
	12H	9.77	10.00	10.93	11.15	12.76	5.92	6.15	7.08	7.30	8.91
12H	4H	8.80	9.13	9.95	10.27	11.84	5.09	5.43	6.25	6.57	8.13
	6H	9.39	9.66	10.56	10.81	12.39	5.66	5.92	6.82	7.08	8.65
	8H	9.61	9.84	10.77	10.99	12.60	5.87	6.10	7.03	7.25	8.86

END OF REPORT